DOCKET NO. SA-228

EXHIBIT NO. 17K

NATIONAL TRANSPORTATION SAFETY BOARD

WASHINGTON, D.C.

FINAL REPORT: SAFETY TESTING OF LI-ION CELLS
MANUFACTURERS X, Y, AND Z

(BY: U.S. DEPARTMENT OF TRANSPORTATION)

U.S. Department of Transportation

FINAL REPORT

Safety Testing of Li-ion Cells

Manufacturer X

Test # 337

June 28, 2001

Safety Test Summary
Mfg. X
Li-ion Cells
Test # 337

Model A, Cylindrical Cell, 1600 mAh

Drill Penetration Test @ 100 % State of Charge

Three (3) cells were subjected to a Drill Penetration test. The cells were completely penetrated by a 3/16 inch steel jobbers drill bit. The cell skin temperature was continuously monitored during the test period. Upon penetration, there was no violent reaction, and the only visible reaction was liquid oozing from the cell. The highest peak skin temperature was 113 °C, while the lowest peak skin temperature was 99 °C.

Drill Penetration Test @ 50 % State of Charge

Three (3) cells were subjected to a Drill Penetration test. The cells were completely penetrated by a 3/16 inch steel jobbers drill bit. The cell skin temperature was continuously monitored during the test period. Upon penetration, and removal of the drill bit, there was no visible reaction. The highest peak skin temperature was 116 °C, while the lowest peak skin temperature was 107 °C.

Nail Penetration Test @ 100 % State of Charge

Three (3) cells were subjected to a Nail Penetration test. The cells were completely penetrated by an eight-penny nail. The cell skin temperature was continuously monitored during the test period. Upon penetration, the cells reacted with vapors emanating from, and liquid bubbling at the penetration hole. The highest peak skin temperature was 126 °C, while the lowest peak skin temperature was 113 °C.

Nail Penetration Test @ 50 % State of Charge

Three (3) cells were subjected to a Nail Penetration test. The cells were completely penetrated by an eight-penny nail. The cell skin temperature was continuously monitored during the test period. Upon penetration, the cells reacted with vapors emanating from, and liquid bubbling at the penetration hole. The highest peak skin temperature was 125 °C, while the lowest peak skin temperature was 118 °C.

Model B, Prismatic Cell, 620 mAh

Drill Penetration Test @ 100 % State of Charge

Three (3) cells were subjected to a Drill Penetration test. The cells were completely penetrated by a 3/16 inch steel jobbers drill bit. The cell skin temperature was continuously monitored during the test period. Upon penetration, the **first** cell reacted with the expulsion of a few burning particles. The **second** and **third** cells had no visible reaction. The highest peak skin temperature was 105 °C, while the lowest peak skin temperature was 76 °C.

Drill Penetration Test @ 50 % State of Charge

Three (3) cells were subjected to a Drill Penetration test. The cells were completely penetrated by a 3/16 inch steel jobbers drill bit. The cell skin temperature was continuously monitored during the test period. Upon penetration, and removal of the drill bit, the only visible reaction was liquid bubbling at the penetration hole. The highest peak skin temperature was 91 °C, while the lowest peak skin temperature was 80 °C.

Nail Penetration Test @ 100 % State of Charge

Three (3) cells were subjected to a Nail Penetration test. The cells were completely penetrated by an eight-penny nail. The cell skin temperature was continuously monitored during the test period. Upon penetration, there was no visible reaction. The highest peak skin temperature was 105 °C, while the lowest peak skin temperature was 104 °C.

Nail Penetration Test @ 50 % State of Charge

Three (3) cells were subjected to a Nail Penetration test. The cells were completely penetrated by an eight-penny nail. The cell skin temperature was continuously monitored during the test period. Upon penetration, the only visible reaction was the dripping of a small amount of liquid from the penetration hole. The highest peak skin temperature was 106 °C, while the lowest peak skin temperature was 105 °C.

ENVIRONMENTAL TESTING LABORATORY

CELL TYPE: MODEL A
LOT NO: MFG X 100% S.O.C.
TESTED BY: NCL
DATE: 6-15-01

TEST SPEC NO.: TEST #337
DESCRIPTION: DRILL + NAIL
* OPERATIONAL PACKAGED
NON-OPERATIONAL UNPACKAGED
*LOAD:

TEST PURPOSE: SAFETY

SERIAL NO.	INITIAL / PRE-TEST	POST ENVIRONMENT / FINAL
DRILL		
1	NO BURNING PARTICLE, ELECTROLYTE OOZING.	MAX TEMP = 110
2	NO BURNING PARTICLES, ELECTROLYTE OOZING.	MAX TEMP = 99
3	NO BURNING PARTICLES, ELECTROLYTE OOZING.	MAX TEMP = 113
NAIL		
4	VAPORS + BUBBLING	MAX TEMP = 122
5	VAPORS + BUBBLING	MAX TEMP = 126
6	VAPORS + BUBBLING	MAX TEMP = 113

REMARKS: T/C ON BOTTOM

FORM NO: 88-1202

ENVIRONMENTAL TESTING LABORATORY

CELL TYPE MODEL A
LOT NO: MFG. X 50% SOC
TESTED BY: INCL
DATE: 6-15-01

TEST PURPOSE: SAFETY

TEST SPEC NO.: TEST # 337
DESCRIPTION: DRILL & NAIL
* OPERATIONAL PACKAGED
NON-OPERATIONAL UNPACKAGED
*LOAD:

SERIAL NO.	INITIAL / PRE-TEST					POST ENVIRONMENT / FINAL					
DRILL											
1	NO	BURNING	PARTICLES						MAX TEMP =	116	
2	NO	BURNING	PARTICLES						MAX TEMP =	114	
3	NO	BURNING	PARTICLES						MAX TEMP =	107	
NAIL											
~~4~~	VAPORS AND LIQUID								MAX TEMP =	121	
~~5~~	VAPORS AND LIQUID								MAX TEMP =	125	
6	VAPORS AND LIQUID								MAX TEMP =	118	

REMARKS: T/C ON BOTTOM

FORM NO: 88-1202

ENVIRONMENTAL TESTING LABORATORY

CELL TYPE MODEL B" _____ TEST SPEC NO.: _____

LOT NO: MFG X 100% SOC TEST #337

TESTED BY: NBL

DESCRIPTION: DRILL & NAIL

DATE: 6-15-01

* OPERATIONAL PACKAGED

NON-OPERATIONAL UNPACKAGED

TEST PURPOSE: SAFETY

*LOAD: _____

SERIAL NO.	INITIAL / PRE-TEST	POST ENVIRONMENT / FINAL
DRILL		
1	A FEW BURNING PARTICLES.	MAX TEMP = 76 C
2	NO BURNING PARTICLES	MAX TEMP = 105 C
3	NO BURNING PARTICLES	MAX TEMP = 100 C
NAIL		
4	NO REACTION	MAX TEMP = 105
5	NO REACTION	MAX TEMP = 105
6	NO REACTION	MAX TEMP = 104

REMARKS:

FORM NO: 88-1202

ENVIRONMENTAL TESTING LABORATORY

CELL TYPE MODEL B — TEST SPEC NO.: _____

LOT NO: MFG X 50%SOC — TEST # 337

TESTED BY: NCL — DESCRIPTION: DRILL & NAIL

DATE: 6-15-01 — * OPERATIONAL PACKAGED

NON-OPERATIONAL UNPACKAGED

TEST PURPOSE: SAFETY — *LOAD: _____

SERIAL NO.	INITIAL / PRE-TEST	POST ENVIRONMENT / FINAL	
DRILL			
1	NO BURNING PARTICLES, BUBBLING @ 33 Sec		MAX TEMP = 84 C
2	NO BURNING PARTICLES "	"	MAX TEMP = 80 C
3	NO BURNING PARTICLES, MINOR BUBBLING		MAX TEMP = 91 C
NAIL			
4	SM. AMT LIQUID		MAX TEMP = 106
5	SM AMT LIQUID		MAX TEMP = 106
6	SM AMT LIQUID		MAX TEMP = 105

REMARKS:

FORM NO: 88-1202

U.S. Department of Transportation

FINAL REPORT

Safety Testing of Li-ion Cells

Manufacturer Y

Test # 339

June 28, 2001

Safety Test Summary
Mfg. Y
Li-ion Cells
Test # 339

Model C, Cylindrical Cell, 1500 mAh

Drill Penetration Test @ 100 % State of Charge

Three (3) cells were subjected to a Drill Penetration test. The cells were completely penetrated by a 3/16 inch steel jobbers drill bit. The cell skin temperature was continuously monitored during the test period. Upon penetration, the **first** cell reacted with the expulsion of a lot of burning particles followed by liquid bubbling at the entry hole. The **second** cell, upon penetration, reacted with the expulsion of a lot of burning particles, and smoke emanating from the entry hole. The **third** cell reacted with the expulsion of some burning particles and smoke emanating from the entry hole. The highest peak skin temperature was 107 °C, while the lowest peak skin temperature was 47 °C.

Drill Penetration Test @ 50 % State of Charge

Three (3) cells were subjected to a Drill Penetration test. The cells were completely penetrated by a 3/16 inch steel jobbers drill bit. The cell skin temperature was continuously monitored during the test period. Upon penetration, all of the cells reacted with the expulsion of only a few burning particles. The highest peak skin temperature was 37 °C, while the lowest peak skin temperature was 36 °C.

Nail Penetration Test @ 100 % State of Charge

Three (3) cells were subjected to a Nail Penetration test. The cells were completely penetrated by an eight-penny nail. The cell skin temperature was continuously monitored during the test period. Upon penetration, the **first** cell only reacted with a small amount

of liquid oozing from the entry hole, while the **second** and **third** cells exhibited slightly more oozing accompanied by vapors emanating from the entry hole. The highest peak skin temperature was 122 °C, while the lowest peak skin temperature was 119 °C.

Nail Penetration Test @ 50 % State of Charge

Three (3) cells were subjected to a Nail Penetration test. The cells were completely penetrated by an eight-penny nail. The cell skin temperature was continuously monitored during the test period. Upon penetration, all of the cells only reacted with some liquid oozing from the entry hole. The highest peak skin temperature was 125 °C, while the lowest peak skin temperature was 120 °C.

Model D, Prismatic Cell, 875 mAh

Drill Penetration Test @ 100 % State of Charge

Three (3) cells were subjected to a Drill Penetration test. The cells were completely penetrated by a 3/16 inch steel jobbers drill bit. The cell skin temperature was continuously monitored during the test period. Upon penetration, the **first** and **second** cells reacted with the expulsion of a few burning particles. The **third** cell reacted with the expulsion of a moderate amount of burning particles. The highest peak skin temperature was 117 °C, while the lowest peak skin temperature was 44 °C.

Drill Penetration Test @ 50 % State of Charge

Three (3) cells were subjected to a Drill Penetration test. The cells were completely penetrated by a 3/16 inch steel jobbers drill bit. The cell skin temperature was continuously monitored during the test period. Upon penetration, all of the cells reacted with the expulsion of very few burning particles. The highest peak skin temperature was 124 °C, while the lowest peak skin temperature was 42 °C.

Nail Penetration Test @ 100 % State of Charge

Three (3) cells were subjected to a Nail Penetration test. The cells were completely penetrated by an eight-penny nail. The cell skin temperature was continuously monitored during the test period. Upon penetration, the **first** cell only reacted with a small puff of vapor emanating from the entry hole. The **second** and **third** cells exhibited some liquid oozing, accompanied by vapors emanating from the entry hole. The highest peak skin temperature was 125 °C, while the lowest peak skin temperature was 122 °C.

Nail Penetration Test @ 50 % State of Charge

Three (3) cells were subjected to a Nail Penetration test. The cells were completely penetrated by an eight-penny nail. The cell skin temperature was continuously monitored during the test period. Upon penetration, the **first** cell only reacted with vapors emanating from the entry hole. The **second** cell exhibited some liquid oozing, and the **third** cell only reacted with a small amount of vapor emanating from the entry hole. The highest peak skin temperature was 125 °C, while the lowest peak skin temperature was 119 °C.

ENVIRONMENTAL TESTING LABORATORY

CELL TYPE: MODEL C _____ TEST SPEC NO.: _____

LOT NO: MFG Y 100% SOC TEST #339

TESTED BY: NCL DESCRIPTION: DRILL & NAIL

DATE: 6-15-01 * OPERATIONAL PACKAGED

NON-OPERATIONAL UNPACKAGED

TEST PURPOSE: SAFETY *LOAD: _____

SERIAL NO.	INITIAL / PRE-TEST	POST ENVIRONMENT / FINAL	
			107
DRILL			
1	A LOT OF BURNING PARTICLES & BURBLING	MAX TEMP	~~31~~
2	A LOT OF BURNING PARTICLES & SMOKE	MAX TEMP =	47
3	SOME BURNING PARTICLES & SMOKE	MAX TEMP =	105
NAIL			
4	NO REACTION. LIQUID OOZED (SM)	MAX TEMP =	122
5	NO REACTION. VAPORS. LIQUID	MAX TEMP =	120
6	VAPORS, OOZING.	MAX TEMP =	119

REMARKS: T/C ON BOTTOM

#1 DRILLED TWICE

FORM NO: 88-1202

ENVIRONMENTAL TESTING LABORATORY

CELL TYPE MODEL C _____ TEST SPEC NO.: _____

LOT NO: MFG Y 50% SOC TEST #339

TESTED BY: NCL

DATE: 6-15-01

DESCRIPTION: DRILL & NAIL

* OPERATIONAL PACKAGED

NON-OPERATIONAL UNPACKAGED

TEST PURPOSE: SAFETY

*LOAD: _____

SERIAL NO.	INITIAL / PRE-TEST	POST ENVIRONMENT / FINAL
DRILL		
1	A FEW BURNING PARTICLES	MAX TEMP = 36
2	A FEW BURNING PARTICLES	MAX TEMP = 37
3	A FEW BURNING PARTICLES	MAX TEMP = 36
NAIL		
4	NO REACTION. OOZING	MAX TEMP = 120
5	NO REACTION. OOZING	MAX TEMP = 125
6	NO REACTION. OOZING	MAX TEMP = 122

REMARKS: T/C ON BOTTOM (DRILL)

FORM NO: 88-1202

ENVIRONMENTAL TESTING LABORATORY

CELL TYPE: MODEL D TEST SPEC NO.: _____

LOT NO: MFG Y 100% SOC TEST # 339

TESTED BY: NCL

DESCRIPTION: DRILL & NAIL

DATE: 6-15-01

* OPERATIONAL PACKAGED

NON-OPERATIONAL UNPACKAGED

TEST PURPOSE: SAFETY

*LOAD: _____

SERIAL NO.	INITIAL / PRE-TEST	POST ENVIRONMENT / FINAL
DRILL		
1	A FEW SPARKS & BURNING PARTICLES	MAX TEMP = 48 C
2	A FEW BURNING PARTICLES	MAX TEMP = 117 C
3	MODERATE AMT BURNING PARTICLES	MAX TEMP = 44 C
NAIL		
4	SMALL PUFF ~~SMOKE~~ VAPOR @ 120 C	MAX TEMP = 122
5	Sm PUFF VAPOR & LIQUID @ 2 MIN, 10 SEC	MAX TEMP = 125
6	BUBBLING @ 1 MIN 35 SEC. VAPORS	MAX TEMP = 125

REMARKS:

FORM NO: 88-1202

SPECIALTY BATTERY FACILITY
ENVIRONMENTAL TESTING LABORATORY

CELL TYPE: MODEL D TEST SPEC NO.: _____

LOT NO: MFG Y 50% SOC TEST # 339

TESTED BY: NCL DESCRIPTION: DRILL & NAIL

DATE: 6-15-01 * OPERATIONAL PACKAGED

NON-OPERATIONAL UNPACKAGED

TEST PURPOSE: SAFETY *LOAD: _____

SERIAL NO.	INITIAL / PRE-TEST	POST ENVIRONMENT / FINAL	
DRILL			
1	VERY FEW BURNING PARTICLES		MAX TEMP 72 C
2	VERY FEW BURNING PARICLES		MAX TEMP 42 C
3	VERY FEW BURNING PARTICLES		MAX TEMP 124 C
NAIL			
4	~~NO FUME~~ VAPORS.		MAX TEMP = 119
5	LIQUID OOZING.		MAX TEMP = 125
6	SM VAPORS		MAX TEMP = 124

REMARKS:

FORM NO: 88-1202

U.S. Department of Transportation

FINAL REPORT

Safety Testing of Li-ion Cells

Manufacturer Z

Test # 338

June 28, 2001

Safety Test Summary
Mfg. Z
Li-ion Cells
Test # 338

Model E, Cylindrical Cell, 1700 mAh

Drill Penetration Test @ 100 % State of Charge

Three (3) cells were subjected to a Drill Penetration test. The cells were completely penetrated by a 3/16 inch steel jobbers drill bit. The cell skin temperature was continuously monitored during the test period. Upon penetration, the **first** cell reacted with the expulsion of a few burning particles, followed by liquid oozing from the entry hole. The **second** cell, upon penetration, reacted the same with the addition of vapors emanating from the entry hole. The **third** cell reacted with the expulsion of a few burning particles and smoke emanating from the entry hole. The highest peak skin temperature was 115 °C, while the lowest peak skin temperature was 111 °C.

Drill Penetration Test @ 50 % State of Charge

Three (3) cells were subjected to a Drill Penetration test. The cells were completely penetrated by a 3/16 inch steel jobbers drill bit. The cell skin temperature was continuously monitored during the test period. Upon penetration, the **first** cell reacted with the expulsion of a few burning particles, followed by vapors emanating from the entry hole. The **second** cell, upon penetration, reacted with the expulsion of a few burning particles and liquid oozing from the entry hole. The **third** cell reacted with the expulsion of a few burning particles, smoke, and liquid oozing from the entry hole. The highest peak skin temperature was 119 °C, while the lowest peak skin temperature was 116 °C.

Nail Penetration Test @ 100 % State of Charge

Three (3) cells were subjected to a Nail Penetration test. The cells were completely penetrated by an eight-penny nail. The cell skin temperature was continuously monitored during the test period. Upon penetration, all of the cells reacted with vapors emanating, and liquid oozing from the penetration hole. The highest peak skin temperature was 123 °C, while the lowest peak skin temperature was 119 °C.

Nail Penetration Test @ 50 % State of Charge

Three (3) cells were subjected to a Nail Penetration test. The cells were completely penetrated by an eight-penny nail. The cell skin temperature was continuously monitored during the test period. Upon penetration, all of the cells reacted with vapors emanating, and liquid oozing from the penetration hole. The highest peak skin temperature was 123 °C, while the lowest peak skin temperature was 122 °C.

Model F, Prismatic Cell, 1550 mAh

Drill Penetration Test @ 100 % State of Charge

Three (3) cells were subjected to a Drill Penetration test. The cells were completely penetrated by a 3/16 inch steel jobbers drill bit. The cell skin temperature was continuously monitored during the test period. Upon penetration, the **first** and **second** cells reacted with the expulsion of a few burning particles, followed by bubbling of liquid at the entry hole. The **third** cell, upon penetration, expelled only a single spark. The highest peak skin temperature was 115 °C, while the lowest peak skin temperature was 112 °C.

Drill Penetration Test @ 50 % State of Charge

Three (3) cells were subjected to a Drill Penetration test. The cells were completely penetrated by a 3/16 inch steel jobbers drill bit. The cell skin temperature was continuously monitored during the test period. Upon penetration, the **first** cell reacted with the

expulsion of a few burning particles, followed by bubbling of liquid at the entry hole. The **second** and **third** cells, upon penetration, exhibited no visible reaction. . The highest peak skin temperature was 123 °C, while the lowest peak skin temperature was 116 °C.

Nail Penetration Test @ 100 % State of Charge

Three (3) cells were subjected to a Nail Penetration test. The cells were completely penetrated by an eight-penny nail. The cell skin temperature was continuously monitored during the test period. Upon penetration, all of the cells reacted with vapors emanating, and liquid oozing from the penetration hole. The highest peak skin temperature was 123 °C, while the lowest peak skin temperature was 119 °C.

Nail Penetration Test @ 50 % State of Charge

Three (3) cells were subjected to a Nail Penetration test. The cells were completely penetrated by an eight-penny nail. The cell skin temperature was continuously monitored during the test period. Upon penetration, all of the cells reacted with a small to moderate amount of liquid oozing from the penetration hole. The highest peak skin temperature was 116 °C, while the lowest peak skin temperature was 114 °C.

Model G, Prismatic Cell, 600 mAh

Drill Penetration Test @ 100 % State of Charge

Three (3) cells were subjected to a Drill Penetration test. The cells were completely penetrated by a 3/16 inch steel jobbers drill bit. The cell skin temperature was continuously monitored during the test period. Upon penetration, the **first** cell reacted with only a small puff of smoke. The **second** cell expelled a single burning particle. The **third** cell, upon penetration, exhibited no visible reaction. The highest peak skin temperature was 116 °C, while the lowest peak skin temperature was 73 °C.

Drill Penetration Test @ 50 % State of Charge

Three (3) cells were subjected to a Drill Penetration test. The cells were completely penetrated by a 3/16 inch steel jobbers drill bit. The cell skin temperature was continuously monitored during the test period. Upon penetration, none of the cells exhibited any visible reaction. The highest peak skin temperature was 126 °C, while the lowest peak skin temperature was 112 °C.

Nail Penetration Test @ 100 % State of Charge

Three (3) cells were subjected to a Nail Penetration test. The cells were completely penetrated by an eight-penny nail. The cell skin temperature was continuously monitored during the test period. Upon penetration, none of the cells exhibited any visible reaction. The highest peak skin temperature was 114 °C, while the lowest peak skin temperature was 108 °C.

Nail Penetration Test @ 50 % State of Charge

Three (3) cells were subjected to a Nail Penetration test. The cells were completely penetrated by an eight-penny nail. The cell skin temperature was continuously monitored during the test period. Upon penetration, all of the cells exhibited liquid oozing from the entry hole. The highest peak skin temperature was 118 °C, while the lowest peak skin temperature was 103 °C.

ENVIRONMENTAL TESTING LABORATORY

CELL TYPE: MODEL E
LOT NO: MFG Z 100% SOC
TESTED BY: NCL
DATE: 6-15-01

TEST PURPOSE: SAFETY

TEST SPEC NO.: TEST # 338

DESCRIPTION: DRILL + NAIL

* OPERATIONAL PACKAGED
NON-OPERATIONAL UNPACKAGED

*LOAD:

SERIAL NO.	INITIAL / PRE-TEST	POST ENVIRONMENT / FINAL	
DRILL			
1	FEW BURNING PARTICLES, OOZING	MAX TEMP =	115
2	FEW BURNING PARTICLES, OOZING, VAPORS	MAX TEMP =	114
3	FEW BURNING PARTICLES, SMOKE	MAX TEMP =	111
NAIL			
4	VAPORS, LIQUID OOZING	MAX TEMP =	123
5	VAPORS, LIQUID OOZING	MAX TEMP =	119
6	VAPORS, LIQUID OOZING	MAX TEMP =	119

REMARKS: T/C ON BOTTOM (DRILL)

FORM NO: 88-1202

ENVIRONMENTAL TESTING LABORATORY

CELL TYPE: MODEL E _____ TEST SPEC NO.: _____

LOT NO: MFG Z 50% SOC TEST #338

TESTED BY: NCL

DESCRIPTION: DRILL + NAIL

DATE: 6-15-01

* OPERATIONAL PACKAGED

NON-OPERATIONAL UNPACKAGED

TEST PURPOSE: SAFETY

*LOAD: _____

SERIAL NO.	INITIAL / PRE-TEST	POST ENVIRONMENT / FINAL
DRILL		
1	A FEW BURNING PARTICLES, VAPORS	MAX TEMP = 116
2	A FEW BURNING PARTICLES, OOZING	MAX TEMP = 118
3	A FEW BURNING PARTICLES, SMOKE, OOZING	MAX TEMP = 119
NAIL		
4	NO VISIBLE REACTION. VAPORS. OOZING	MAX TEMP = 122
5	VAPORS. OOZING	MAX TEMP = 123
6	VAPORS. OOZING	MAX TEMP = 123

REMARKS: T/C ON BOTTOM (DRILL)

FORM NO: 88-1202

ENVIRONMENTAL TESTING LABORATORY

CELL TYPE: MODEL F
LOT NO: MFG # 100% SOC
TESTED BY: NOL
DATE: 6-15-01

TEST PURPOSE: SAFETY

TEST SPEC NO.: TEST #338

DESCRIPTION: DRILL & NAIL

* OPERATIONAL PACKAGED
NON-OPERATIONAL UNPACKAGED

*LOAD:

SERIAL NO.	INITIAL / PRE-TEST	POST ENVIRONMENT / FINAL	
DRILL			
1	A FEW BURNING PARTICLES &	BUBBLING	MAX TEMP = 115
2	A FEW BURNING PARTICLES &	BUBBLING	MAX TEMP = 114
3	A SINGLE SPARK		MAX TEMP = 112
NAIL			
4	VAPORS & OOZING LIQUID		MAX TEMP = 113
5	VAPORS & OOZING LIQUID		MAX TEMP = 115
6	VAPORS & OOZING LIQUID		MAX TEMP = 112

REMARKS: T/C UNDER CELL

FORM NO: 88-1202

ENVIRONMENTAL TESTING LABORATORY

CELL TYPE: MODEL F _____ TEST SPEC NO.: _____

LOT NO: MFG Z 50% SOC TEST # 338

TESTED BY: WCL

DESCRIPTION: DRILL & NAIL

DATE: 6-15-01

* OPERATIONAL PACKAGED

NON-OPERATIONAL UNPACKAGED

TEST PURPOSE: SAFETY

*LOAD: _____

SERIAL NO.	INITIAL / PRE-TEST					POST ENVIRONMENT / FINAL					
DRILL											
1	A FEW BURNING PARTICLES & BUBBLING								MAX TEMP = 116		
2	NO BURNING PARTICLES								MAX TEMP = 120		
3	NO BURNING PARTICLES								MAX TEMP = 123		
NAIL											
4	SM AMT LIQUID								MAX TEMP = 116		
5	MODERATE AMT LIQUID								MAX TEMP = 114		
6	MODERATE AMT LIQUID								MAX TEMP = 114		

REMARKS: T/C BOTTOM OF CELL

FORM NO: 88-1202

ENVIRONMENTAL TESTING LABORATORY

CELL TYPE: MODEL G _____ TEST SPEC NO.: _____

LOT NO: MFG X 100% SOC TEST #338

TESTED BY: NCL

DESCRIPTION: DRILL & NAIL

DATE: 6-15-01

* OPERATIONAL PACKAGED

NON-OPERATIONAL UNPACKAGED

TEST PURPOSE: SAFETY

*LOAD: _____

SERIAL NO.	INITIAL / PRE-TEST	POST ENVIRONMENT / FINAL
DRILL		
1	SM PUFF OF SMOKE	MAX TEMP = 73
2	1 BURNING PARTICLE, ~~SOM~~	MAX TEMP = 76
3	NO BURING PARTICLES	MAX TEMP = 116
NAIL		
4	NO REACTION. NO ELECTROLYTE LEAKAGE	MAX TEMP = 114
5	NO REACTION. NO ELECTROLYTE LEAKAGE	MAX TEMP = 108
6	NO REACTION. NO ELECTROLYTE LEAKAGE	MAX TEMP = 109

REMARKS: #3 BEGAN W/ T/C UNDER CELL

FORM NO: 88-1202

ENVIRONMENTAL TESTING LABORATORY

CELL TYPE: MODEL G
LOT NO: MFG Z 50% SOC
TESTED BY: NCL
DATE: 6-15-01

TEST PURPOSE: SAFETY

TEST SPEC NO.: TEST #338

DESCRIPTION: DRILL & NAIL

* OPERATIONAL PACKAGED
NON-OPERATIONAL UNPACKAGED

*LOAD:

SERIAL NO.	INITIAL / PRE-TEST	POST ENVIRONMENT / FINAL
DRILL		
1	NO BURNING PARTICLES	MAX TEMP = 126
2	NO BURNING PARTICLES	MAX TEMP = 123
3	NO BURNING PARTICLES	MAX TEMP = 112
NAIL		
4	LIQUID OOZING	MAX TEMP = 103
5	LIQUID OOZING	MAX TEMP = 119
6	LIQUID OOZING	MAX TEMP = 118

REMARKS: T/C UNDER CELL

FORM NO: 88-1202